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# GENESIS

Wilfrid J. Harrington, O.P.

# and EVOLUTION



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# **GENESIS AND EVOLUTION**

by

**Wilfrid J. Harrington, O.P.**



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# I APPROACH TO THE BIBLE

For all Christians, and for Jews too so far as the Old Testament is concerned, the Bible is the Word of God. This is a description which may be meaningful, or which may be quite misleading, depending on how it is understood. For, when we look at it more closely, we find that it is not at all as clear and as simple as it appears; and yet, unless we have grasped its true meaning, we can never understand the Bible. The proper evaluation of Scripture and the right approach to it are altogether necessary if we are to discern its teaching: without these we cannot even be sure *when* it is teaching or be certain of *what* it teaches. Scripture has been made to say many things that are foreign to it and has even become the basis of erroneous doctrines because men have taken it, not for what it is, but as they imagined it ought to be. It is a matter of vital importance to see the Bible as it really is.

## 1. The Bible

The Bible may be described as the collection of writings which the Church has recognized as inspired and has accepted as such. It is known as *the* Book, and there is indeed a very true sense in which it may be considered as one great work—the work of a divine Author—yet, from the human standpoint it is not really a book but a library; or, better still, it is the literature of a people, the chosen people, God's people. This, as we shall see, is a very important observation and it is a truth that must be grasped from the outset.

We find that Scripture is divided into two parts and we speak of the Old Testament and the New Testament. The Old Testament concerns the people of Israel, the people with whom God made a covenant or treaty; it is the story of this people in the light of the covenant, a story largely of infidelity on their part and of unfailing fidelity on the part of God. The purpose of God, the redemption of mankind, was to be achieved by the sending of his Son into the world, and the coming of the Son of God naturally marked the beginning of a new era. God made a new and final treaty, sealed in the blood of Christ, with a new people of God, the Church. The New Testament tells

of the fulfillment of God's plan. But that plan was there from the beginning because the Testaments, though distinct, are closely linked. The Old leads up to the New and is the preparation, God's preparation, for it, and the Old Testament itself can be fully understood only in the light of fulfillment.

The formation of the Old Testament was a lengthy process. The origins of it, the traditions built around the patriarchs, go back in germ to Abraham, the man of the divine promises, and to his immediate descendants. But it was Moses, the born leader and the lawgiver, who forged a motley crowd of refugees into a nation, and set on foot a mighty religious movement, and gave the impetus to the great literary achievement that is Israel's—and ultimately God's—gift to mankind. The Pentateuch bears the stamp of Moses but the work, as we know it, took its final form many centuries later than Moses. The prophetic literature began in the eighth century and closed in the fourth. The historical books range from *Josue* (based on traditions going back to the thirteenth century) to *I Maccabees* written about the beginning of the first century. Wisdom literature had its first beginnings under Solomon, but the *Book of Wisdom* appeared a bare half-century before Christ. This is enough to indicate that the shaping of the Old Testament was unhurried and involved.

An aspect we ought to realize is that most of the books of the Old Testament are the work of many hands, a work that can very well have grown over a long period, over centuries it may be. Of course, all who have collaborated in the production of each book, whether they have written the substance of it, or have only added some details, have been inspired. But the matter of immediate interest here is that the Old Testament is a collective effort, the work of a whole people, which has deposited in it, through the centuries, the treasures of its tradition. It is the literature of a people, enmeshed in the history of that people: it cannot be considered apart from the people and its history.

The New Testament differs from the Old in many important respects, but it is like it in being closely linked to the life and development of a people, the new people of God—the early Church. Like the other it is also, if only to a limited extent, the

result of a collective effort. This is true of the gospel, at least, which was first lived in the Church and shaped by the Church before the evangelists gave it the precise forms that we know. In short, the New Testament, no less than the Old, bears witness to the truth that God's written word, like his Incarnate Word, came quietly among us and grew and developed until the moment of its manifestation to men. The sacred writers were, all of them, moved by the Spirit in a special way, but the long preparation which their labors crowned was also part of God's saving plan, his solicitude for his chosen people, the old Israel and the New.

## 2. Approach to the Bible

We believe that the Bible is the word of God, and so indeed it is, yet no truth, perhaps, has been so often and so consistently misunderstood. There are still many who imagine that God speaks to us *directly* in every word of Scripture, but to think so is to misconceive God's way of dealing with us. If God has condescended to speak to men he has, in the first place, chosen to speak to them in the language of men. But, beyond that, he has spoken to men in a language that could be understood by those to whom his word was first committed, and by whom the Bible was written, under his inspiration. God does speak to us, but through the people of the Old Testament and through the Christians of the first century.

We must try to realize what is involved in the fact of God speaking to men. Perhaps the best way of grasping this is by following the lead of the Fathers who have pointed to the parallel between the two incarnations of the Word of God—in human language and in human flesh. Just as we know that the Son of God became like men in all things, except for sin (*Heb. 4, 15*), so we can say that the written word of God is like human language in every way, except that it can contain no error. We may, indeed we must, push the parallel further. Christ is not only *like* man, he is truly Man and truly God; Scripture is not merely *like* human language, it is human language in the fullest sense, though all the while it is the word of God.

God speaks to us through human authors whom he uses and moves for that purpose. We can be sure that we know what

God really means only when we are sure of the intention of the human writer, for it is through him, and not directly, that God addresses all the readers of his Scriptures. But there is more to it than that. God adapts his message to the talents of his chosen writer and to the culture of those for whom the message was first intended. In the concrete, he has spoken to us, and still speaks to us, through the mouths, not of Europeans but of Semites, and here, too, the parallel with the Incarnate Word holds good, for Christ was not a man of undetermined race or age—he was a Jew of the first century.

We may not ignore the human conditioning of God's word under peril of misinterpreting God's message. More specifically, we must strive to understand and appreciate the Semitic origin and the Semitic cast and background of the Bible — for all this is an essential part of it. We may not measure the Scriptures by our Western standards but we should, rather, seek to understand the mentality of its writers; this, obviously, calls for a certain reorientation. If we persist in treating the Bible as a twentieth-century product of European thought we cannot fail to do it violence.

When we have once grasped this, our approach to the Scripture will be along the right lines. If we do no more than realize that the mentality of the biblical writers is different from ours we can begin to understand many aspects of the Bible that had hitherto puzzled us. We should also keep in mind that the latest part of Scripture was written almost two thousand years ago and that the earliest part of it took shape another thousand years or so before that. This is another obvious reason why the Bible can present difficulties; it is the product of its own time and we cannot hope to understand it as readily as we might a modern work.

All this is so, but most of all we should like to stress once again the fundamental truth that God has spoken to us in *human language*. The Bible is not only the word of God, it is also the word of men, and the human aspect of it is something we may not ignore. Our only way of knowing what God has to tell us in his Scriptures is by knowing first of all what the human writer wishes to say. It is only by listening carefully to that human voice that we can know when God teaches and what he teaches.



Just here a factor of the first importance enters in. Scriptural inspiration governs the composition of a book, and much of what a writer says is, or at least can be accessory to his leading ideas and it is abundantly clear that the biblical writers are not, at all times and in every detail of their work, teaching something. In the last resort, it is the writer's intention that will determine his meaning. Normally, he will treat of things and speak of them from one aspect only. The stars, for instance, are not seen in quite the same way, and are obviously not described in the same way, by the astronomer who studies their laws, by the poet who is stirred by their beauty, and by the religious thinker who recognizes in them a striking effect of the power of the Creator. We cannot say that the two latter are in error when they speak only according to their point of view.

Now the biblical writers are certainly religious thinkers, and very often they are poets as well, but they are never scientists. If we look for scientific truth in the Bible we shall not find it, simply because it is not there. That is why, for instance, the creation of the universe is described according to the unscientific opinions of the age in which the story was formed and it must be judged in the light of these opinions. And this brings us to the opening chapters of *Genesis*.

### 3. Approach to *Genesis* 1-2

The Book of Genesis is part of a greater work, and it would be well to view it, first of all, in that context. It is now accepted by all scholars that the Pentateuch is a combination of four distinct traditions, and careful literary analysis of the work has unraveled the four strands. All of these begin with Moses (and go back even earlier as regards the patriarchal narrative) but they continued to develop and took final shape at a relatively late date.

The earliest of the traditions is called the *Yahwistic* because it employs the name "Yahweh" right from the creation narrative (cf *Gen.* 2).<sup>2</sup> This tradition is undoubtedly of Judean origin and took its final form in the tenth century. Vivid and picturesque in style, apparently naive, it is in reality profoundly theological and faces up to and answers the gravest problems. The *Elohistic*

tradition gets its designation from the fact that it prefers the name *Elohim*=God (not a special name). It developed in Israel and was fixed in the ninth century. The *Deuteronomical* tradition is confined to the Book of Deuteronomy. The Priestly tradition, which took its final shape in the fifth century, is particularly interested in the organization of the sanctuary, in the sacrifices and feasts and in the sacred personnel; its style is dry and stereotyped. The priests, who were responsible for fixing this tradition, also gave its definitive form to the whole Pentateuch. We may say, briefly, that *Genesis*, *Exodus* and *Numbers* are a combination of the Yahwistic, Elohist and Priestly traditions; *Leviticus* has the Priestly tradition only and the Deuteronomical tradition is found in *Deuteronomy* alone.

We should note very carefully that the date and place of *formation* of these traditions are not the time and place of their *origin*: they began at a much earlier date. "The basis of the Pentateuch, the substance of the traditions which it incorporates and the kernel of its legislation go back to the time when Israel became a people. Now, this epoch is dominated by the figure of Moses: he was the organizer of the people, the originator of its cult, its first lawgiver. The earliest traditions which had been preserved up to his time and the meaning of the events which were linked with his name, were forged into a national epic. The religion of Moses has marked for all time the faith and practice of the people; the law of Moses has remained its rule of life."<sup>3</sup> We may thus affirm the Mosaic origin of the traditions which make up the Pentateuch. These bear the stamp of the milieus in which they were formed and treasured but, as living traditions, they live by the life and vigor which Moses had imparted to them.

It is against this background that we must view *Genesis* and the background has a bearing even on the two opening chapters of the book which are our concern here. Their subject is the origin of the world and of man, matters that belong to the field of geology, paleontology and prehistory according to our ways of thought. But the Bible is not concerned at all with these sciences and, if that is so, any attempt to read science into Scripture is bound to falsify the message of Scripture.

These first chapters describe, in a popular way, the origin of the world and of the human race. They relate in a simple and figurative style, in a manner that would be understood by a simple and quite unscientifically-minded people, fundamental truths such as the creation of all things by God and the special divine intervention in the production of the first man and woman: truths that no scientific theory can ever undermine. "But these truths are, at the same time, facts, and if the truths are certain the facts are therefore real. It is in this sense that the first eleven chapters of *Genesis* have an historical character."<sup>4</sup> God really did make the world "in the beginning." God really intervened in a special way and in a given moment of time and the first members of the human race appeared on this earth: these are historical events, even if they belong to *primal* history.

In order to round off this brief outline of the approach to the Bible, and more specifically to *Genesis* 1-2, there is a point that calls for some comment. In the last century, and especially toward the close of it when physical science had unquestionably come into its own, many theologians and Scripture scholars were stampeded into a false position. They felt that the Bible should have at least as much to say as the scientists about such matters as cosmic and human origins; the result was that *Genesis*, or at least its opening chapters was turned into a science manual *avant la lettre*.

We are told, for example, that the six "days" of creation really represented six geological periods, since it was held that the Hebrew word *yom* (= "day") could signify indefinite duration. Throughout the Bible, however, *yom* means a day of twenty-four hours, but, apart from that, in *Genesis* 1 morning and evening are mentioned in connection with each of the six days and it is declared that sun and moon were created to rule over day and night respectively. Yet, despite these obvious discrepancies, the geological interpretation was vehemently defended.

This is only one example of what is known as "concordism"—the attempt to harmonize the concepts of the Bible with scientific discoveries. Concordism, as such, is a deviation, but it has not been altogether without fruit: the absurd positions — the plain contradictions indeed — to which it ultimately led have brought scholars to a better and truer understanding of the rela-

tions between the Bible and all matters of physical science. We can sympathize with our predecessors and admire their gallant if hopeless struggle and realize, too, that it is in no small measure due to their efforts that we today can view the matter in proper perspective; they have enabled us to map, and seal off, a cul-de-sac.

But just because that is so, any modern attempt to resurrect concordism, in whatever form, must be branded as utterly mischievous and cannot be tolerated. It is nothing other than a misunderstanding of Scripture and must lead inevitably to untenable positions. It means attributing to the inspired writer, and through him to the Holy Spirit, an outlook that is not his; it wrings from him declarations that he has not made and is a stultifying of the word of God. We must accept the simple fact that the biblical view of things and that of science are quite distinct. The question of reconciliation does not arise.

## II THE CREATION OF THE WORLD

The first two chapters of *Genesis* treat of the origin of the world and of man; the obvious approach would surely seem to be to start at the beginning and work through to the end of chapter 2. It would be the logical course — if these chapters formed a unit. Instead of that we have two distinct accounts of creation; and now logic compels us to take them separately.

### I. Two Accounts of Creation

If we start at the first verse of *Genesis* and read as far as 2, 3 we may observe the following characteristics. In the first place the name of God is used throughout. Nothing very unusual in that, one may protest, yet it is significant as we shall see. Then it will be noticed that the works of creation are parceled out in neat categories, and that in their presentation a number of stereotyped formulas keep cropping up, e.g. "God saw that it was good. When we arrive at 2, 4a we are informed: "Such was the origin of the heavens and the earth when they were created"—the great work has been accomplished and the story of it has been told.

Yet, when we read on we find that according to 2, 4b-5 there is still no vegetation on the earth and no man walks upon it—though the formation of these had been described in chapter 1. Besides, chapter 2 goes on to give a detailed account of the shaping of man and woman, just as if nothing had previously been said in this regard. Furthermore, the Creator is now named “Yahweh God.” The stereotyped formulas have disappeared and the style, now picturesque and vivid, is quite a contrast to the first chapter. The same style, with the same divine title, continues throughout the story of the Fall in chapters 3 and 4.

But in chapter 5 the name “God” reappears and the stereotyped style is even more in evidence than it was in chapter 1. The patriarchs are presented according to a formula which, apart from a slight modification in the case of Adam and Noe, the first and last on the list, is unvaried. For example: “When Seth had lived a hundred and five years he begot Enosh. Seth lived after the birth of Enosh eight hundred and seven years, and had other sons and daughters. All the days of Seth were nine hundred and thirty years, then he died.” (5, 6-8).<sup>1</sup> It is evident that chapter 5 is the continuation of the narrative of chapter 1 and, logically, should come immediately after 2, 4a. All the rest (2, 4b-4, 24) belongs to another, largely parallel, but distinct account.

This situation is not an isolated example but is constantly repeated throughout the Pentateuch; it is explained by the existence of the four main traditions that we have indicated in the previous chapter. There we remarked that the Temple priests were not only responsible for the development of the Priestly tradition, but that they also gave its final form to the Pentateuch. However, the bulk of that great work was already in being before they dotted the i’s and crossed the t’s and its present unevenness is due to the fact that the compilers who built it up by combining the traditions did not always attempt to produce a harmonized version, as we would do, but, to a notable extent, preferred to place parallel accounts side by side. In their view, each of the venerable traditions should, as far as possible, be preserved and one ought not to be sacrificed for the sake of the others. That is why it is still possible for scholars to identify and isolate many of the pieces that make up the mosaic.

## 2. Genesis 2, 4b-6

When Yahweh God made the earth and the heavens there was as yet no shrub of the field on the earth and no plant of the field had as yet sprung up, because Yahweh God had not sent rain on the earth and there was no man to till the ground. But a mist went up from the earth and watered the whole surface of the ground.<sup>2</sup>

As we have seen, chapter 2 of *Genesis* is earlier than chapter 1, and that is why we turn to it first. However, we need not linger over these few verses because they serve merely as an introduction to the real purpose of this account, the formation of man. The opening phrase, "When Yahweh God made the earth and the heavens" is an editorial link with the story of chapter 1 and the narrative really begins at v. 5. The compositive form of the divine name, "Yahweh God," which occurs throughout *Genesis* 2-3, and rarely elsewhere, was no doubt prompted by a desire to harmonize the Yahwistic source with the preceding Priestly one which uses only "God."

The earth had been made by God, but it is quite bare of vegetation because no rain had fallen on it and there is no man to till it. There is no vegetation despite the fact that a mist went up from the earth (or a spring came forth from it—the sense of the Hebrew word *edh* is uncertain) and watered the land. It follows that fertility is regarded as being in some way ultimately due to rainfall, an attitude that is perfectly understandable in Palestinian conditions where — until the rise of modern Israel and its vast irrigation schemes—crops depended utterly on timely rainfall. In the same way, throughout the Bible, the seasonal rains are regarded as a choice blessing of God.

Such is the state of affairs that immediately preceded the appearance of man. The author has provided the setting, but all his interest is centered on that one creature. Thus the plans and trees of vv. 9-17 are those of the garden of Eden which is the home of man, and the formation of the animals (vv. 19-20) is not related for its own sake but as an introduction to the formation of woman. The Yahwistic narrative has nothing to say about the creation of the world apart from the simple statement that Yahweh made the earth and the heavens. Not by a

single word, nor by a hint, does it indicate *how* God called the world into being.

### 3. Genesis 1, 1-25

#### Introduction

The understanding, or misunderstanding, of the creation-story that now stands at the head of *Genesis* depends on the answer to the question: What does the author of the creation-story teach us? The plain answer is that he teaches us two facts: (1) God made all things;<sup>3</sup> (2) the sabbath is of divine institution — these he wishes to drive home. He believed that God created the world but he understood no more than we (much less indeed) *how* it was created. He might have stated his belief bluntly, but he judged it much more effective to parcel out the work and so emphasize the fact that God made *every* thing. The result of it all is that the writer's assertion: "In the beginning God created heaven and earth" is true, divinely true, but that the description of the work of creation is a product of his imagination.

For the creation-story is, from the literary viewpoint, patently an artificial composition. We find that the work of the six days is so distributed that there is a close correspondence between the first day and the fourth, between the second and the fifth, between the third and the sixth. We also find that the author shares the ideas of his own time and not those of the scientific twentieth century. The people for whom he wrote—and he himself for that matter—were quite unable to grasp an abstract notion of the creation (not because of lack of intelligence, but simply because of their Semitic mentality) but they did understand work, and so he presents the Creator as a Workman who completed his task in six days and then took a rest. When all was finished, "God blessed the seventh day and sanctified it, because on it God rested from all his work of creation."<sup>2,3</sup> Thus, very neatly, the story of creation is rounded off by the declaration that it was God himself who began the sabbath rest: the chosen people can do no better than imitate their God.

If more attention had been paid to this verse we might have been spared such nonsense regarding the preceding chapter. It is, of course, quite impossible that God should rest — he is

constantly sustaining everything and, besides, he has no need of rest. Yet, if we interpret the stages of creation literally (as many have done) we must, if we are to be consistent, also seriously consider God as a workman wearied by his mighty work and seeking rest: we may not pick and chose. What we have throughout is, obviously, a striking but quite imaginative description. To see it in any other light is to do violence to the author's intention, and to the intention of the Holy Spirit who inspired him.

### Commentary

#### (1) IN THE BEGINNING, 1, 1-2. •

In the beginning God created the heavens and the earth.

The subject of creation is this earth of ours and the starry heavens; in other words, it is what appears to the eye, the naked eye, of man and, moreover, as it appeared to the eyes of men who lived when the account took shape. It is, of course, true that God made the whole universe but, for the biblical writer, that universe was whatever he could observe—to him that meant everything. The modern telescope and all our astronomy have not altered his teaching one whit. When a man believes and asserts, as he has done, that God has made all things, the actual extent of that “all” matters very little indeed.

The Hebrew verb *bara*, rendered “created,” is throughout Scripture (in the verbal form in which it occurs here) reserved for the activity of God. The question whether it involved for the author our idea of *creatio ex nihilo*, “creation from nothingness,” is one we may not legitimately ask. Our very technical notion is a typically Greek idea and is much too abstract for the concrete Semitic mind. That “creation from nothingness” may be reasonably deduced from the text and context is quite another matter.

The earth was formless and empty, darkness covered the deep, and the Spirit of God hovered over the waters.

The work of creation is yet only in the initial stage. The first part of the verse is the author's attempt, his gallant struggle



in fact, to express "nothingness": the earth was still *tohu* and *bohu* (literally, desert and emptiness) and no ray of light lit up the primordial ocean from which the dry land would emerge. He introduces the earth and the waters which figure throughout his narrative but, by describing the formlessness and emptiness of the one and the utter darkness of the other, he indicates that nothing else existed; the earth and heavens are yet in a raw, unordered state. If his formulation of the fact seems forced, naive even, it might be salutary to pause for a moment and try to imagine for ourselves what he is striving to express—our version might not be so very much better after all! However, the important factor, for the author as for us, is that the Spirit of God, his creative power, hovered over the dark waters. From that great emptiness he is going to call all things into existence; only now does the work of creation really begin.

## (2) THE SEVEN DAYS

### i/ *The first day* (3-5)

God said: "Let there be light" and there was light. God saw that the light was good, and God separated the light from the darkness. God called the light "day" and the darkness "night." There was evening and there was morning, a first day.

When we come to the formation of man in chapter 2 we shall find that God is there presented as a potter, but here he merely utters a creative word and the task is done. This very elevated conception of God and the avoidance of anthropomorphism<sup>4</sup> is typical of the Priestly tradition: the divine Workman of this chapter does not, after all, labor as men do.

The creation of light and the distinction between day and night constitute the work of the first day; this had to be if the author is going to deal with a week of seven days—even though the sun is not going to appear until the fourth day. We see a contradiction here but people of an earlier age, ignorant of even quite elementary astronomy, had no difficulty in imagining that light is independent of the sun for, after all, daylight precedes sunrise and it is still bright when the sun is hidden by cloud. So the author sees no problem in putting the creation of light before the creation of the sun.

The first day begins at morning with the creation of light and so, of course, do the following days. (Cf. *Gen.* 1, 3-5. 14.15.18). At a later period (we find the system indicated in the New Testament) the Jews reckoned the day from sunset to sunset; in liturgical matters they still do, and the sabbath begins at sunset on Friday. The phrase "there was evening and there was morning" has sometimes been taken in the same sense but, in reality, it specifies the night period when no work was done: the divine Workman labors only during the daytime. Except after the work of the second day, the phrase "God saw that it was good" occurs each time—it implies that creation measures up perfectly to the Creator's intention.

ii/ *The second day* (6-8)

God said: "Let there be a firmament in the midst of the waters, and let it separate the waters from the waters," and it was so. God made the firmament, which separated the waters which were under the firmament from the waters which were above the firmament, and God called the firmament "heavens." There was evening and there was morning, a second day.

This passage must remain a mystery unless one grasps something of the author's ideas on cosmogony, the shape of the world, ideas which he shared with the people of his time. The "firmament" is the sky, and the blue Palestinian sky does seem to be a solid vault which holds the upper waters, the rain, in check; the same idea occurs later in the Flood-story: the flood-gates of the heavens were opened. The waters underneath the firmament still cover the earth and have not yet been gathered to form the great ocean. At the end of v. 6, following the *Septuagint*—the Greek translation of the Old Testament—we add "and it was so"; the Hebrew has it, mistakenly, after v. 7.

iii/ *The third day* (9-13)

God said: "Let the waters which are under the firmament be gathered together into one mass and let the dry land appear," and it was so. God called the dry land "earth" and the mass of water he called "seas," and God saw that it was good.

And God said: "Let the earth bring forth vegetation: plants yielding seed, and fruit trees bearing fruit wherein is their seed, each according to its kind, upon the earth," and it was so. The earth brought forth vegetation: plants yielding seed according to their kind, and trees bearing fruit wherein is their seed, according to their kind, and God saw that it was good. There was evening and there was morning, a third day.

The waters under the firmament were gathered together into one "mass" — the better reading according to the Greek; the Hebrew has one "place." From underneath the waters, where it was from the beginning, the land now appears and, becomes dry, it is at once fertile and at the divine command brings forth the plants and the trees, with the seeds which will ensure the continuance of plant life. There are, in fact, two works on the third day: the separation of the dry land from the water and the creation of plant life.

#### iv/ *The fourth day* (14-19)

God said: "Let there be lights in the firmament of the heavens to separate the day from the night; and let them serve as signs, to mark seasons and days and years, and let them be as lights in the firmament of the heavens to light up the earth," and it was so. God made the two great lights: the greater light with dominion over the day and the lesser light with dominion over the night; and the stars. God set them in the firmament of the heavens to light up the earth, to rule over the day and over the night and to separate the light from the darkness, and God saw that it was good. And there was evening and there was morning, a fourth day.

On the first day God had made light and had separated light from darkness; now, on the corresponding fourth day, he made the light-giving heavenly bodies, which mark the final separation of day from night. The dominion of the two great lights and their rule over day and night mean no more than the obvious fact that each has its allotted domain. When the sun appears the rule of the moon is ended. Both of them are really at the service of men. "Their names have been designedly omitted: the Sun and the Moon, which all the neighboring peoples re-

garded as gods, are no more than lamps hung in the sky to give light and to mark the calendar!"<sup>5</sup> There is, then, a certain polemical intention in the passage and the author has put the sun and moon in their places, metaphorically as well as literally. But there is no scientific preoccupation, here or anywhere else, and so we read of the two "great lights" for, to the unaided eye, the sun and moon are obviously very much bigger than the tiny stars.

v. *The fifth day* (20-23)

God said: "Let the waters swarm with a swarm of living creatures and let the birds fly over the earth across the firmament of the heavens," and it was so. God created the great sea monsters and all living creatures able to move which swarm in the waters according to their kinds, and every winged creature according to its kind, and God saw that it was good. God blessed them, saying "be fruitful, multiply and fill the waters of the seas and let the birds multiply on the earth." And there was evening and there was morning, a fifth day.

(The phrase, "and it was so" has been added to v. 20, following the Greek; it is absent from the Hebrew.)

The second day saw the firmament separating the waters from the waters, the fifth day sees the living creatures coming forth from the lower waters which, made fruitful by the word of the Creator, swarm with living creatures. According to ancient belief the birds, too, have come from the waters and, besides, they fly toward the firmament, toward the waters above. The emergence of animal life from the sea, and the sequence, sea creatures—flying creatures, have been made much of by some who would grant to the author a foreknowledge of organic evolution. A rather serious snag is that all have appeared in one day! The writer, of course, has no scientific theory whatever in mind.

Just like man later on, the creatures of the water and of the air are blessed. In all of these or in most of them at any rate, procreation has taken place, that mysterious power which was a complete puzzle to the ancients. Here the mystery is solved: that power is the consequence of a divine blessing

and, for men who believe in the God of Israel, this is answer enough. The plants had no need of such a blessing since they carry in themselves the means of reproduction. Obviously, it never occurred to the writer that these need to be fertilized too; in his view, plants have their seeds and that is the end of the matter.

vi. *The sixth day* (24-31)

God said: "Let the earth bring forth living creatures according to their kind: cattle, creeping things and wild beasts according to their kind," and it was so. God made the wild beasts according to their kind, the cattle according to their kind and all creeping things of the ground according to their kind, and God saw that it was good.

And God said: "Let us make man in our image, according to our likeness, and let them have dominion over the fish of the sea, over the birds of the heavens, over the cattle, over all the wild beasts and over every creeping thing that creeps over the earth."

God created man in his image.

In the image of God he created him.

Male and female he created them.

God blessed them and said to them: "Be fruitful, multiply, fill the earth and subdue it; have dominion over the fish of the sea, over the birds of the heavens and over every other living thing that moves over the earth." God said: "Behold, I have given you all plants yielding seed which are upon the surface of the earth and all trees whose fruit yields seeds: they shall be your food. And to all wild beasts, to all the birds of the heavens, and to everything that moves upon the earth, everything that has the breath of life, I have given for food all green plants." And it was so.

God saw everything that he had made and, behold, it was very good. And there was evening and there was morning, a sixth day.

The sixth day, like the corresponding third day, has two works: the creation of land animals and the special creation of man. This fact serves to underline the author's emphasis on the six-day working week, with the sabbath rest. He has to

fit the eight works (he must have been following an older tradition) into his plan and the result is a certain telescoping.

It is strange that the land animals are not blessed. Perhaps it is because the blessing of the human couple at the end of the day (v. 28) reaches also to the animals called into being on the same day. The finished work of creation receives a particularly solemn divine approbation: "It was very good."

#### vii/ *The seventh day* (2, 1-3)

Thus the heavens and the earth were finished, and all the host of them. God finished on the seventh day the work which he had done and on the seventh day he rested from all his work which he had done. God blessed the seventh day and sanctified it, because on it God rested from all his work of creation.

By the "host" or "array" of heaven and earth is meant the whole ordered complexity of created things. God's rest, and his sanctifying of the seventh day, are the author's means of teaching that the sabbath is of divine institution. It is patent that the description here is figurative—but in this it is no different from the rest of the narrative.

#### *Conclusion* (4a)

Such was the origin of the heavens and the earth, when they were created.

It is very probable that this conclusion is a later addition to the text, inserted, most likely, when the two creation stories were joined together.

### III THE CREATION OF MAN

Though they differ in many respects, particularly in the matter of style, the two accounts of creation agree in laying notable emphasis on the formation of man. They make the point, each in its distinctive way, that this creature is unlike all others, that his creation involved a special intervention of God. What is asserted is the theological doctrine of man's

relationship to his Creator or, rather, of the Creator's relationship to him; but neither of the inspired writers sets out, in precise terms, the shape of the divine intervention. The actual manner of man's formation, like the emergence of the world itself, is a scientific question and, as such, is neither raised nor answered in the Bible. "God made man in his image" and "Yahweh breathed into his nostrils a breath of life" are two ways of asserting the presence of a divine element in man, and once we have grasped that fact, and have accepted it, the how and the when of it matter very little. At least, Scripture has nothing to say about them.

## I. The Yahwistic Narrative 2,7. 18-24

Here as in the previous chapter, we start with the Yahwistic narrative because it contains the earliest biblical account of man's creation. In the first place it tells, vividly yet very simply, of the formation of man and then depicts, at much greater length, the fashioning of woman.

### (1) THE FORMATION OF MAN (2-7)

The Yahweh God fashioned man of dust from the ground and breathed into his nostrils a breath of life, and man became a living being.

The Workman of chapter 1 is now a Potter. The "dust from the ground" is fine potter's clay, and God shaped it into a human form; then he breathed into that lifeless figure a breath of life and the figure became a man. We shall see that the animals are also molded by Yahweh and under his hands become living beings, but they are not stirred to life by the divine breath. At a later date, in the Priestly version, the reality that underlies this animation by the breath of Yahweh will be described as the making of man to the image of God. Throughout this narrative the Hebrew noun *ha-adam* (with the article) stands for an individual; the word *adam* means simply "man" but later, (in *Gen.* 4.25; 5, 1-3) it is taken to be the proper name of the first man. We might add that the author is thinking of men as he knew them and it does not occur to him that the first

man might have been rather different in physical appearance. Verses 8-17 give a description of the garden of Eden, the first home of man.

## (2) THE FORMATION OF WOMAN (2, 18-24)

Yahweh God said: "It is not good for man to be on his own, I will make him a helper who will suit him." Again Yahweh God fashioned from clay all the beasts of the fields and all the birds of the heavens, and he led them to the man to see what he would call them; and whatever the man called any living creature that was its name. The man gave names to all the cattle, to the birds of the heavens and to all the wild beasts; but for the man there was not found a helper that suited him. So Yahweh God caused a deep sleep to fall on the man and as he slumbered he took one of his ribs and closed up its place with flesh. Then Yahweh God built up into a woman the rib which he had taken from the man and brought her to the man. And the man exclaimed:

"At long last, this is bone of my bone and flesh of my flesh!

She shall be called 'woman' because she was taken out of man."

That is why a man leaves his father and his mother and cleaves to his wife, and they become one flesh.

To a superficial eye the Yahwistic narrative seems hopelessly naive. Nothing could be further from the truth, for it is, in reality, a profoundly theological work which faces and answers fundamental problems. It uses figurative language indeed, but it does not hesitate to treat of such matters as the creation of all things by God, the special intervention of God in the production of the first man and of the first woman, an original state of moral integrity, the sin of the first parents, the Fall and all the evils that followed it. All these are theological problems of vital interest to mankind, and though we are here concerned only with the formation of man and woman, we list the others in order to indicate the range of depth of this tradition. In its final form it is the work of a gifted theologian and, by the same token, we are forewarned: it is vain to look for scientific theory in *Genesis 2*.



The philosophers tell us that man is a social animal; the Bible puts it more simply and with greater feeling: "It is not good for man to be on his own." But the inspired writer has in mind something more specific than man's gregarious instinct; he is thinking, rather, of man's deep-felt need for another being like himself, one of the same nature as he, yet not quite himself. Then follows, in the text, the charming description of the parade of animals before the first man. He imposes names on all these creatures thus, at one and the same time, manifesting his knowledge of their nature and expressing his dominion over them, because, in the biblical viewpoint, the imposition of a name implies both factors. Though all these creatures have been fashioned, as he was, from clay, he is unable to find one among them that can share his life, that can hold converse with him—for he alone has been livened by the divine breath. The great chasm that separates man from the animals is very strikingly indicated.

Yahweh is still determined to provide a suitable helpmate. The fact that man and the animals are made from a common clay has not sufficed to establish any real bond between them; man's helpmate must be more intimately bound to him: she will be formed from part of him. This alone will ensure the desired conformity between them. So Yahweh plunges the man into a deep sleep — the Hebrew word *tardemah* means a profound and extraordinary sleep sent by God. While he slept, Yahweh, now turned Surgeon, removed one of his ribs and proceeded to build up that rib into a woman.

This apparently artless description really presents a viewpoint that is nothing less than revolutionary, especially in view of the early date of the tradition. There was a universal tendency, notably among Semites, to regard woman as a chattel and to consider her as a being definitely inferior to man. In those days it was decidedly a man's world, and the mere fact that the author took the trouble to deal specially and specifically with the creation of woman is itself significant. But he goes further than that. By describing her—in purely figurative terms of course—as being made from man, he presents her as being of the same nature as man, his equal; a truth which man is made to acknow-

ledge openly (v. 22). She is also, in the fullest sense, his helper, one entirely suited to him, particularly by her union with him in marriage, in which both become one flesh (v. 24).

When Yahweh introduces this new creature to him, as she stands before his delighted gaze, the man bursts into song—the first love-song! Here at last is his heart's desire, a being just like himself, one who can understand him and share his life to the full. He calls her by his own name, merely giving it a feminine form: *ishsha* from *ish*.<sup>1</sup> The next verse is a comment on his words. It is because they were made for each other from the beginning that man and woman will break all other ties and join in marriage. Centuries later a greater than the inspired writer of *Genesis* will add his comment and bring out the full implication of the earlier text: "So they are no longer two but one flesh. What therefore God has joined together let no man put asunder." (Matt. 19, 6).

## 2. The Priestly Narrative 1, 26-30

God said: "Let us make man in our image, according to our likeness, and let them have dominion over the fish of the sea, over the birds of the heavens, over the cattle, over all the wild beasts and over every creeping thing that creeps over the earth."

God created man in his image.

In the image of God he created him,

Male and female he created them.

God blessed them and said to them: "Be fruitful, multiply, fill the earth and subdue it; have dominion over the fish of the sea, over the birds of the heavens and over every living thing that moves over the earth." God said: "Behold, I have given you all plants yielding seed which are upon the whole surface of the earth and all trees whose fruit yields seeds: they shall be your food. And to all wild beasts, to all the birds of the heavens, and to everything that moves upon the earth, everything that has the breath of life, I have given for food all green plants." And it was so.

The story of the creation of man as given in *Genesis* 1 provides, among other things, an interesting illustration of how

the Priestly writer overcame a practical difficulty. He was determined to insist on the very special nature of man's creation; the problem was, how to do it. To give him a day all to himself was out of the question because, as it was, the author's program was overcrowded: he had to fit eight works into six days. Yet, in the end, he solved it brilliantly. God who, up to now, had merely uttered his creative word, almost casually, now pauses and takes thought—"Let us make man." That is what the plural indicates, in somewhat the same way that we might remark: "Now let us see." There is no reference to the Trinity, a doctrine that is not revealed in the Old Testament.

Man is made "in the image, according to the likeness" of God. The expressions are not synonyms, but the second restricts the meaning of the first: man resembles God, but not perfectly. This resemblance first of all sets man apart from the animals because it is by his intellect, will and power over creatures that man is like God. Ultimately it also implies, but this was to be clarified very much later, a participation in the divine nature by grace.

At v. 27 the staid Priestly writer has a surprise in store for us: most uncharacteristically, he breaks into song! It may be that it is another device of his to underline this last work of creation, or it may be that even he is carried away. At any rate, these few lines are in verse. Man (in this account a collective noun) is created male and female, both of them in the image of God, the two sexes set on equal footing. Thus, much more economically and just as effectively, he makes the same point as the Yahwistic author: woman is man's equal in nature and was created so from the beginning.

This description of the creation of man, in form so very different from the earlier Yahwistic version, should make it quite clear to us that the Priestly writer did not interpret the other account literally, otherwise he could not have written as he has. Here no time elapses between the creation of male and female, and there is no special formation of woman. Yet the essential teaching is the same, for this, of course, is his sole interest and he feels quite free to present that teaching in his own way. We too, at long last, have come to imitate his good sense.

The next verse continues the close parallel, in substance if not in form, with the Yahwistic narrative. The divine blessing is imparted on the first pair that they may be fruitful and multiply, which means, as the other account has it, that the sexes are complementary and that marriage is of divine institution. It is no wonder, in view of the doctrine of these chapters, that Israel's attitude to sex and marriage was so healthy. Failures there were, because man is frail, but moral standards remained and they were exacting. But it is rather the whole atmosphere that is refreshing because the Israelite never forgot that at the end of this work God saw that it was very good."

In the Priestly account also man is given dominion over the animals, and food is provided: seed-bearing plants and fruit are reserved for men while grass plants are for the animals. All are vegetarians—this is the image of a golden age when men and animals lived in peace and concord for, according to the Priestly tradition, men began to eat flesh in the new and sterner age after the Flood. (Cf. 9, 3). In the Yahwistic tradition Abel already offers animal sacrifices (4, 4) and Yahweh himself can provide Adam and Eve with skin-clothing (3, 31). This discrepancy is another warning that we must read Scripture according to the intention of the inspired authors. In this case, vegetarian diet has the value of a symbol, just as the Yahweh's garden of Eden is a symbol: both symbolize the harmony that reigned in the beginning, before that harmony was disrupted by the Fall.<sup>2</sup>

It is obvious that if we take the two accounts of the creation of man, and compare them detail by detail, and seek to harmonize them, we shall come up against not a few difficulties. Indeed, if we are to get anything like a consistent picture, we shall have to compromise, to gloss over some details and to explain away others. Did God create man and woman simultaneously and as the very last work of creation, as we read in chapter 1? Or did he first make man, next the animals and only then woman, as the other account has it? And if they were both made at the same time, how was woman made from man? Were they made by the sole creative word of God, or did the divine Potter model them from clay?

We should have realized by now that all of these are false problems; difficulties are bound to arise if we take imaginative description and symbolism for literal fact. Far from being in any way contradictory, the two accounts agree perfectly. But to see that we must understand that the teaching of both of them is exclusively theological.

Chapter 1 shows us the creation of man and woman in the image and according to the resemblance of God, and their dominion over the whole material and animal world. The terms of this creation imply a state of friendship with God, the nature of which will be clarified in later scriptural passages. It is taught that God instituted marriage and sanctified it.

The account of chapter 2 is much more naive in appearance but the doctrine is just as sublime. Man is like God because he has been livened by the divine breath and, made from him, woman shares the same nature and has the same relation to God. Man names the animals and so has dominion over them as well as over nature. Marriage was instituted by God from the beginning and its unity and indissolubility are implied. The atmosphere of the whole narrative makes it clear that the first human couple lived, for a time, in perfect friendship with God.

So there is no problem; the two accounts do harmonize, and both agree on one further point: man is the pride of God's creation, and the production of man called for a special intervention on the part of God. Each describes that special act of creation, that divine intervention, in his own way. But at the end we must acknowledge that we do not know what shape it took—we know only that God *did* intervene.

### 3. Two New Testament Texts

As we have just seen, the first two chapters of *Genesis* deal specifically with the doctrine of creation, and elsewhere in the Old Testament there are no more than passing references to it. With regard to the creation of man, however, there are two New Testament texts which must detain us for a moment though, as we shall see, only the second of these raises any special difficulty. The passage in question (Rom. 5, 12-19) is important and does set limits to certain scientific views we may entertain

on the origin of man—but this is only because of theological implications.

(1) ACTS 17, 26

He made all men who have come from one, to dwell upon the whole face of the earth, having determined their appointed epochs and the boundaries of their habitation.

In his speech before the Areopagus (Acts 17, 22-31) St. Paul developed the theme of man's knowledge of God. He has made the world and everything in it, he is the Lord of heaven and earth. He also rules and directs the destinies of nations because it is he who has brought forth, from one single source, the human race that now inhabits the earth.

Though some Mss. give variant readings: "from one blood or nation, or race, only" the authentic text is certainly: "from one only," which is, admittedly, vague. What does St. Paul mean? Is he really asserting that the whole human race has sprung from one man? We shall have to see what he really wants to prove.

He has declared that God is the Maker and the Lord of nature—an idea that would be acceptable to many of his hearers. Then he goes on to the more specifically Jewish idea that God is the Lord of history too, a God who manifests himself in the life of nations. Among the ancients the view was widespread that each people had a special origin and, also, that the gods were the creators of particular peoples, each of which consequently had its own native god. Paul opposes this false view: there is only one God because there is only one mankind, called into being by God.

When he declares that the human race has come "from one only," he certainly has the Genesis texts in mind. But in the context he is intent on proving that there is only one God; the unity of the human race is an argument in this proof and is not here considered for its own sake. We cannot say that Acts 17, 26 *formally and explicitly* teaches the origin of the human race from one man. St. Paul's first concern is that all men should turn to the one God who created all of them.<sup>3</sup>

Therefore, just as through one man sin has entered into the world, and through sin death, and so death has passed to all men in view of the fact that all men have sinned;— for until the law sin was in the world, but sin is not imputed where there is no law; yet death reigned from Adam to Moses even over those who did not sin by a transgression like that of Adam, who is the type of him who was to come.

But the gift is not like the wrongdoing. If by the wrongdoing of one the many died, much more have the grace of God, and the gift following on the grace of one man Jesus Christ, abounded for many. And the gift is not like the effect of this one man's sin; the judgment coming after one offense led to condemnation, the free gift following many misdeeds brings justification. If, because of one man's wrongdoing death reigned through the one man, much more will they who receive the abundance of the grace and of the gift of justice reign in life through the one Jesus Christ.

Then as one man's misdeed has brought condemnation on all men so one man's act of justice has won for all men a justification that means life. For just as by the disobedience of the one man the many were made sinners, so also by the obedience of one the many will be made just.

This is not the place for a detailed commentary on the very important, and very difficult, passage of *Romans*. It is considered here because of its implication in the problems of the origin of man and, more precisely, regarding the unity of the human race. The doctrine of original sin, clearly in mind in the passage, is a fundamental one, but we may fairly ask whether St. Paul is primarily intent on propounding that doctrine, or whether his first interest lies elsewhere.

The Apostle is desirous to show that Christ has repaired, in superabundant fashion, the sin of the first man and its consequences. In his development he contrasts Adam and Christ and stresses the superiority of the latter. His starting-point is the incontestable fact that sin is in the world, and since death, which is the punishment of sin, has come into the world as a consequence of the sin of Adam (Wisd. 2, 24) he can conclude

that sin itself has entered into humanity because of the initial transgression. It is the doctrine of original sin. But it interests St. Paul because it enables him to build a parallel between the evil work of the first Adam and the superabundant reparation of the "last Adam," for it is as the new head of the race that Christ redeems humanity.

The first three verses (12-14) are of immediate concern to us, but these must be viewed in the context of the whole passage and in the light of the Apostle's preoccupation with the salvation wrought by Christ. He argues that it is through one man that "sin," this is to say, evil personified, came into the world bringing death in its train. By "death" is meant not only physical death but also, and principally, spiritual and external death. In v. 12 the Vulgate rendering, "*in whom* all have sinned," meaning "in Adam," is now abandoned since the Greek *eph' ō* cannot be so translated. If death has passed to all men "in view of the fact that" all men have sinned the sense is that all men have, by their personal sins, made their own, and have ratified, the state of affairs brought about by the sin of the first man. The Apostle looks squarely at all men and finds sin in all of them but he sees, too, that Adam's sin remains the effective cause of this lamentable state of affairs because it has provoked the subsequent evil conduct of men.

Paul is not presenting a systematic theory of original sin but he does recognize, in humanity, a collective fall, a state of sin, which carries with it the penalty of death. But it is not quite certain that he would explain the existence of a sin of the whole human race in terms of physical heredity. At least in *Romans* he does not mention this explicitly. And if he has thought of generation as the explanation of the resemblance between the first man and his race it is not clear that he would use the word in its precise biological meaning.

"Paul teaches that there is a transmission of sin from Adam to all men, without explaining how it comes about. It is enough for him to take the text of *Genesis* and to deduce from it explicitly the idea that the heritage of the first man includes not only death but also sin. It is not his concern to theorize on the origin of sin but to affirm the power of the Savior over . . . sin."<sup>4</sup>

It is true that traditional Catholic theology has linked the



universal transmission of original sin to the fact of physical descent from Adam. This is also the most obvious interpretation of the teaching of the Council of Trent—though this precise aspect has not been defined.<sup>5</sup> Indeed, the clearest indication that this specific point of physical generation is not strictly binding in faith is provided in the encyclical *Humani Generis*. Pope Pius XII writes:

Christians cannot lend their support to a theory which involves the existence, after Adam's time, of some earthly race of men, truly so called, who were not descended ultimately from him, or also supposes that Adam was the name given to some group of our primordial ancestors. It does not appear how such views can be reconciled with the doctrine of original sin, as this is guaranteed to us by Scripture and Tradition and proposed to us by the Church.<sup>6</sup>

The point that interests us for the moment is the precise meaning of "descent." That there is still room for speculation here is evidenced by the significant phrase: "it does not appear" (and also by: "*how* such views *can* be reconciled"). If physical generation was taken to be the only possible manner of transmission of original sin, and still more if it was regarded as a truth strictly binding in faith, there could be no place for such a qualification. The question has not, then, been definitely closed, but, at the same time, we must admit candidly that we cannot see any better explanation of the data of revelation.

Even less than St. Paul have we been considering the matter of original sin for its own sake. What does concern us is that the traditional Catholic teaching on the transmission of original sin does seem to demand monogenism, this is to say, that the human race, all men without exception, have descended from one original human couple; this will be treated in our next chapter. The chief matter of interest is that we have here an excellent example of an occasion when Bible and science do meet: an interpretation of Scripture and a scientific hypothesis are in conflict. In such a situation the Catholic will be guided by the teaching authority of his Church and we have just seen how prudent, and how eminently reasonable, that teaching authority is.

The purpose of our glance at the New Testament has been the very same as the purpose that has directed our study of the *Genesis* texts: to establish the precise meaning of Scripture. If we wish to speak exactly we may not say that St. Paul, in *Acts*, formally teaches that all men have descended from one man and we may not claim that in *Romans* he expressly teaches that original sin has been transmitted to all men by *physical generation* from the first man. Catholic theology deduces both the one and the other from these texts and it would be very imprudent indeed to argue that it has done so mistakenly. But the first duty of an exegete is to determine what a scriptural text does truly say and to isolate precisions that are due to later reflection. That is what we have tried to do here and, having done this, we can leave the matter be since any further study of the passages would fall outside our scope.

#### IV EVOLUTION AND MAN

It has already been pointed out, in the Preface, that this work is not primarily an exposition of the theory of organic evolution. Our first object has been to show what the Bible really has to say and, even more specifically, what the Bible does not teach. If the *Genesis creation* narratives have been chosen to illustrate the general principle, that is because these have been so often misinterpreted. But since it has a bearing on the matter of these chapters, and since it will serve to round off this study, the question of evolution is now considered; besides, it is a topic that is rather frequently discussed. It will be shown that, within broad limits, the theory of the evolution of living beings, including physical man, in no way conflicts with the teaching of Scripture.

Evolution has not been "proved" in the strict sense; yet ever since the theory was first proposed, it has shown its worth as a working hypothesis, and that over a very wide field. It has, of course, been corrected and modified in many of its details and still needs to be further clarified, but as a general principle it is now, in scientific circles at least, accepted without question. It seems, then, that the non-scientist (the writer is one) who would reject the theory out of hand would be guilty

of no little presumption. If he happens to be a theologian his attitude may be due to the vestiges of the deep-rooted mutual suspicion that, until quite recently, bedeviled the relations of theologians and scientists. Today there is a refreshing change because it is at last realized that there cannot be conflict between the competent theologian and the sincere scientist—if each keeps strictly to his own field and if each has, as he ought to have, a respect, a reverence even, for the solid achievements of the other. There are even less grounds for friction when the theologian is a biblical theologian. His field is limited to the inspired word of God and the Author of the Bible is the Author, too, of Nature, the field of the positive scientist. The divine Author has not contradicted himself.

## 1. The Theory of Organic Evolution<sup>1</sup>

The idea of evolution is that one form of life changed into another, so that distinct organisms descend from a common ancestor. It runs counter to the idea of "special creation" according to which each specific present-day form of life appeared on earth in that form by direct creation. The scientific theory of organic evolution says that the present-day complex forms of plant and animal life, including man, developed progressively, by direct descent, over many millions of years, from one or more simple primitive forms.

Evolution is a theory that arises out of certain facts which have been observed in the study of biology and zoology (particularly in the field of anatomy and embryology) and of paleontology<sup>2</sup>; other branches of physical science have also contributed. Such facts suggest that evolution occurred over the ages and this suggestion, developed and formulated, is the theory. But the events which the theory itself points to as facts are events which belong to the past. It is impossible to observe these past events now (the nearest approach is through the fossil record—which is notoriously incomplete), so it is impossible to demonstrate the theory by direct scientific observation. However, such demonstration is not necessary in order to establish the theory. If those factors which the theory proposes as the means by which evolution worked—the mechanics of evolution—can be

conclusively established as sufficient explanation of the process, then that would make the theory worthy of acceptance. But the fact of the impossibility of direct demonstration makes it all the more necessary that this explanation should be thoroughly sound and conclusive.

When we speak of the theory of evolution, then, we include at once the two elements in it: (1) the facts which suggest the theory; and (2) the scientific explanation of the mechanics of evolution. The two must be carefully distinguished because the facts convince nearly all scientists of the necessity and truth of the theory; but until the mechanics are thoroughly and conclusively explained, the truth of the theory is not demonstrated.

The scientific explanation of the mechanics of evolution bears chiefly on the transmission from parents to offspring of hereditary characteristics, both anatomical (bodily structure) and physiological (the functional working of the body). It is especially concerned to show how the process of descent by physical generation can provoke in the offspring characteristics which are different from those of their parents. Thus the modern theory of evolution is primarily genetical and recognizes that the laws which govern heredity are the major factors in the evolutionary process. In this field there is very much room for further study, but the results already achieved, though they have not, by any means, proved the theory, have succeeded in establishing it more fully.

At this stage we shall leave the consideration of organic evolution in general and concentrate in the hypothesis of the evolution of physical man, that is to say, of the human body. But the emergence of man is a critical stage in the whole process, and if it can be shown that the evidence points to evolution in his case, the whole theory will be enormously reinforced.

## 2. The Lineage of Man

Here we are concerned with going back from present-day man toward his origin as man, this is to say, to that stage at which, according to the theory of evolution, man could have issued from animal origins. It is on the point of man's beginning that we shall have to concentrate. But before considering that

precise point we should give some evidence of why we cannot consider man, physical man, an exception in the evolutionary process. We shall examine, very briefly, the fossil evidence.

## (1) PREHISTORIC MAN

Scientists have estimated that the whole universe came into being about 5,000 million (*i.e.* 5 billion) years ago, while the earth, according to their calculations, is about 3,000 million years old. These figures have been arrived at by different sound scientific methods of calculation based on both the sciences of astronomy and physics. It is noteworthy that the conclusions of the different methods bear one another out—the figures, of course, are widely approximate.

So much for the age of the world, but when did life first appear on the earth, or in what way did it emerge? Knowledge on the scientific aspect of these matters is very incomplete and, while science forms its theories, it has no definite conclusions to offer in answer to these questions. What it can say with assurance, however, is that the earliest absolutely certain fossil remains of living things—sea-dwelling plants of primitive physical formation—belong to the period of about 500 million years ago.

Finally, we may ask, when did the human form of life, when did Man, first appear on earth? According to the prevalent theory of paleontologists and anthropologists, the date would be late in the Pliocene Period,<sup>3</sup> that is to say, very much nearer to 1 million than to 15 million years ago. This is a theory because the oldest fossil remains of man, which are the basic and direct data in the matter, belong to the period of nearly half a million years ago. From that to the end of the Stone Age (4,500 B.C.) is the period of Prehistoric Man.

From the most ancient of fossil remains up to the most recent of them, three types of prehistoric men dominate in the fossil record. They are by no means the only types, but they hold a dominating position by reason of their wide extent through time and place. They are the following:

- A. The Pithecanthropines<sup>4</sup>: they belong to a period conveniently set out as  $\frac{1}{2}$  to  $\frac{1}{4}$  of a million years ago.

- B. Neanderthal<sup>5</sup> man, who flourished, within broad dates, from c. 150,000 to c. 50,000 B.C.
- C. Cro-Magnon<sup>6</sup> man, dating to several thousand years at either side of 25,000 B.C.

Type A has been found in Asia and Africa; B comes from many parts of Europe, from Asia and Africa, and is the most widespread type of all; while C has been found in Europe. No ancient human fossils have been found in either America or Australasia. These three types make up the three main zoological (i.e. animal life) categories of prehistoric men. Each category comprises a few different varieties of one generically similar type of human fossils, but all of them are similar by reason of physical structure.

Physical structure is not alone the basis of zoological classification: it is the basic factor in the study which forms one of the two main branches of the science of anthropology—physical anthropology. The second main branch studies human culture—cultural anthropology. We shall take these two primary factors in the science (i.e. Physical Structure and Culture), and deal with each of them in turn, and shall consider the dominant types of prehistoric men under the heading of each. While we do so, these two factors will also establish the point that we wish to bring to the fore: that even the most ancient fossils we treat of here were once men, not merely animals.

### i/ *Physical Structure.*

None of the soft tissues of the human body have been preserved as fossils; bones only have been found and these are what the physical anthropologists have to work on. Among the anatomical characteristics which distinguish between fossil men, the general bulk and the height are relevant, while the curvature of the thigh-bone, and its insertion into the hip, are of some slight importance as indicating the degree of uprightness in the stance. However, it is in the structure of the skull that the most distinctive characteristics are found. In general, the bone of the earlier skulls is thicker, even in the light bone of the upper part of the head. Special difference between skulls are connected with

two areas there, the area of the jaws and that of the brain. The earlier types have heavy, projecting jaws with fairly prominent formation at the mouth (prognatism) while there is no prominence at the chin. As the jaws reduce in the later types so do the teeth become smaller and more crowded.

But the most significant differences between skulls occur in the area of the brain. From the most ancient types up to Cro-Magnon the brain capacity gets gradually larger (and then decreases toward Modern man). Along with these go corresponding differences in the upper part of the skull: in the later types the top of the head becomes more domelike; the browridges of the early types grow less and a more distinct forehead is formed; and the frontal bones become more vertical, giving the elevation and projection that is a nose. Other physical features may be appealed to, but these are the essential ones that distinguish between fossil men.

When we apply these characteristics to the three main fossil types we get the following result. The skull formation and brain capacity of Pithecanthropus make it certain that he was a man (the same is true, *a fortiori*, of the other, later pithecanthropine types); today anthropologists are unanimous in this. Neanderthal man has a low, sloping but definite forehead; but he also has a heavy and almost chinless jaw. His average brain capacity is very slightly larger than that of Modern man. Cro-Magnon is very like Modern man, but his average brain-capacity is considerably larger. It will be noticed that among these dominant types of prehistoric men there is an approximation, from the oldest to the most recent, toward the physical structure of Modern man.

## ii/ *Culture.*

Prehistoric men, in providing for their human needs, used their human minds to create a culture. By human inventiveness they shaped the material circumstances around them to the purposes of life; they formed their social and religious institutions; and they otherwise used mind to create a climate of human living. Sufficient evidence of all this has been found associated with the less ancient fossils. For the earliest human fossil remains the

evidence bears mainly on the material aspects of culture. In practice, it consists of the association with them of artifacts,<sup>7</sup> chiefly of stone, and of finds which show that they had discovered how to make fire and how to put it to use.

The physical structure of *Pithecanthropus* shows that he was a man; indeed, his skull shows that he had speech, because of the development of his brain in areas associated with speech. Direct connection of artifacts with him has not been demonstrated, but throughout the region of China-Malaya several stone implements have been found which most authorities incline to consider as his handiwork. Besides, very definite human culture can be associated with other fossil men of the pithecanthropine type. For *Pithecanthropus*, then, while the argument from artifacts to a culture is in itself probable but not conclusive, all the converging lines of evidence indicate that he had a culture. Neanderthal man fashioned many implements from stone, some of which are very finely made, and he introduced the use of mineral pigments into human art. He had a ceremonial burial of the dead, thus suggesting that he had a highly developed system of religion. Cro-Magnon man made several beautifully fashioned implements from stone and bone. It was he, most likely, who produced those masterly cave paintings which have been found in many parts of Europe, notably in the Lascaux cave, near Montignac in southern France.

A conclusion which emerges from all the foregoing is that the fossil types which we include here were men, the "rational animal" of Aristotle. This is shown by their physical structure and by their having created a culture, or at least having had the human mind which does so.<sup>8</sup>

## (2) TRACING THE PATTERN

What is the relationship between the dominant and other types of prehistoric man, and the relationship of all of them to Modern man? The line of the three dominant types, *Pithecanthropus*, Neanderthal, Cro-Magnon, in that chronological order, must be regarded as fundamental in any interpretation of the fossil record. The conclusion usually drawn from it is that it shows an approximation, along one line of physical de-



velopment, toward the physical culture of Modern man. But we must point out that this line, thus formed, cannot be shown to be continuous: the types, as types, are distinct from one another; and they are separated by considerable periods of time.

Apart from the line just indicated, a second line of fossils is formed by types who, from their first representative onward, shows a skull formation that is very close to the physical structure of Modern man. This line, though it is even less continuous than the other, is now being considered as very significant. The conclusion has been proposed that this is the line of prehistoric men whose type of physical structure leads to Modern man. The most important fossil remains in the line are those of Fontéchevade<sup>9</sup> man (dated c. 180,000 B.C.), named after the place in which he was found in 1947. His face and forehead are almost exactly like those of Modern man and his brain capacity is slightly larger than the average of Modern man and very slightly larger than that of Neanderthal man. We might add, and this is important, that fossil evidence shows that the prehistoric types did interbreed.

In the light of these remarks we can evaluate the longstanding viewpoint, which completely held the field of theory until recent years, that a development did take place along the direct line of the three dominant types. Each of the earlier types would have become extinct in the upward progress of the development and each, as types, would have been species of men distinct from each other and from modern man. (Cro-Magnon, of course, is the same type as present-day man; they are grouped together under the heading *Homo Sapiens*.)

But there remains the evidence of a second line of fossils which, from the beginning, are much closer to the physical type of Modern man than are the Pithecanthropines or Neanderthal man. This evidence must modify enormously that of the other viewpoint. Some anthropologists think that this line of physical structure leads directly to that of Modern man. In other words, it is very likely that the ancestors of Modern man are not to be sought among Neanderthal men and the Pithecanthropines but in another and distinct type of man, the forerunner of the Fontéchevade man.

At any rate we may say that the physical form of present-day man is much more ancient than was supposed by the older school of anthropologists. The pattern would seem to be this: a network of lines in which the different types criss-cross and intermingle, with a gradual alteration in form and with the influence of one form (Fontéchevade) progressively dominating. Indeed, anthropologists now say that if we wish to see how the pattern of prehistoric man was formed, we should study it in the influences that shaped it as they now work in the difference of races among the one species of present-day man.

### (3) THE LINEAGE OF MAN

Today all men are one species; the only distinction applicable to them, on grounds of physical characteristics, is some difference of race. Prehistoric men are represented in the human fossils which have been found, and according to scientific anthropology these too were truly men. The record of human fossils shows a chronological sequence of prehistoric men who were quite different from one another as physical types; these seem to indicate different lines of human descent. Some authorities on evolution regard these different types as distinct species of men, others think it more correct to distinguish between them as different races. The latter idea is now beginning to prevail. (In the first view, certain prehistoric species of men have become extinct, so that now there is only one species; in the other view some prehistoric races, e.g. Pithecanthropus, are extinct.)

The general idea of species is: a group of individuals who, under natural conditions, breed among themselves producing fertile offspring, but who are not able to do so with individuals of other groups. Race has been defined as "a natural group of individuals each of whom possesses one or more deep-rooted physical characteristics that are absent in other groups within the species."<sup>10</sup> The idea of distinct species of prehistoric men does not necessarily deny their origin from one and the same species. One original species can so evolve over the years as to branch into two or more distinct species (and the process can be repeated in each of the branches). If, then, we work backward along each of these branches, these distinct species can

be traced back to one original source, or stock. This is called the common stock of all these species. In the idea of races of prehistoric men, all those races likewise comes from one original common stock.<sup>11</sup>

From the one broadly uniform physical type of modern men, we arrive back at a diversity of physical types among prehistoric men. The fossil record of prehistoric men goes back no further than c. 500,000 years. But we must go back more than twice or three times that number of years before we come to the common stock of man. (According to the vast majority of authorities on evolution, man would have emerged in the evolutionary process toward the end of the Pliocene Period, perhaps not very much before one million years ago.) So the diversity of types in the fossil record furnishes no more than pointers to the way in which man could have descended from the common stock of men. Furthermore, this gap in time between the oldest human fossils and the common stock is an immense one, which can be bridged in the system of evolution by theory only (there are no human fossils in it). And, in fact, it is in that area that the theory of evolution most closely concerns us.

When evolutionists examine the general physical uniformity of modern men and the physical diversity found among prehistoric men they trace man's lineage so as to account for all this. They have two main theories, which concern us at the point where they explain the immediate origin and descent of man. They are theories of the Polyphyletic and Monophyletic origin of man.<sup>12</sup>

*Polyphyletic* origin of man: the ancestral lineage of man goes back to *many* sources, which were distinct at the very beginnings of humanity. This, of course, makes a theory of Polygenism: the common stock was animal, and from it there branched different lines of evolution, each of which produced man. There were, then, many distinct races, or species, of men (at the very least, many individuals) at the beginnings of humanity, each of which was an ancestor of men. From these all races, or species, of men, extinct or surviving, descend. We must emphasize the point that this theory maintains that there were one or more

human races, or species, which did not descend from *one human* source, or ancestor. That implies that there were men after the man Adam, who did not descend from him as from one first parent of all men. This is *polygenism*, as Catholic theology uses the term.

*Monophyletic* origin of man: man's lineage goes back to *one* human source. When we focus our examination on the source we find that the common stock of man was human, not animal. The stream of animal evolution attained to the human level at that one particular stage, and from that human level, as from the common stock, all races, or species, of men, extinct or surviving descend. But there is a division of opinion on the nature of the source, or ancestor, and that makes a very important distinction for us.

One opinion maintains that the one human stock—the human origin of all men—was, from its beginning at the human level, a *group* of individuals. In this theory the *one* human ancestor of all men would not be an individual, but many individuals—a collective unit. That implies that there were men after the man Adam, who did not descend from him. In the terminology of Catholic theology, that is again *polygenism*.

The second opinion maintains that the original ancestor, in the common stock, from whom all men descended, was individual—not collective. This means that all men of all races, or species, have descended from one *individual man*. In the terminology of Catholic theology that is what *monogenism* denotes.

By way of conclusion we should note that the theory of evolution is concerned only with physical facts. The data of fossil remains, along with all the other data, biological and otherwise, out of which the theory arises, belong exclusively to the physical order of things. The theory of evolution, then, can be concerned only with man's body and its functional processes—physical matters. Man's soul, spiritual and immortal, is totally beyond its order of things. Anything that goes beyond the material development of organic life, and the forces of chemistry and physics connected with it, goes beyond the theory of evolution as it is proposed and explained. Thus, creation and the creative processes transcend the scope of the theory itself.

The theory of evolution, therefore, cannot offer to explain the nature of the human soul or its creation.

There is also another aspect, indicated by the encyclical *Humani Generis*. Catholics are warned that they may not follow the opinion of those who assert that men have existed, later than Adam, who were not descended from him, or that "Adam" stands for a group of ancestors; that is to say, they may not accept polygenism in either of the forms described above—since it does not appear how these opinions can be reconciled with the dogma of original sin.<sup>13</sup> The words "it does not appear" should be noted. The question has not been definitely closed and the problem may be studied more closely. In the meantime—as we have seen in an earlier chapter—Catholic teaching on original sin, as we understand it today, does seem to demand that the human race began with one man, Adam, the effect of whose sin has been transmitted to all men by way of carnal descent from him; it would be at least very temerarious to deny this.

We should recall that the anthropologists are almost unanimous in admitting that man is monophyletic. This position does not necessarily involve the view that all men have descended from one pair, but that hypothesis cannot be shown to be impossible. Since, ultimately, the origin of man is lost in the past, the anthropologist must admit that all men *could* have risen from one original pair. Monogenism, demanded by Catholic theology, is also a reasonable hypothesis in the field of organic evolution.

## CONCLUSION

We have already quoted a passage from *Humani Generis* and another passage from the encyclical can very well figure in our conclusion. Here, for the first time, the term "evolution" occurs in a papal document, and the reasonableness of it, as a scientific theory, is clearly acknowledged. The Pope points to the limits beyond which science may not, indeed cannot, go and he is, understandably, particularly interested in the question of man's development.

The teaching of the Church leaves the doctrine of Evolution an open question, as long as it confines its speculations to the development, from other living matter already in existence, of the human body. (That souls are immediately created by God is a view which the Catholic Faith imposes on us.) In the present state of scientific and theological opinion, this question may be legitimately canvassed by research, and by discussions between experts on both sides.<sup>14</sup>

In the light of this statement we may outline the results of this study. We have seen that, once it is accepted that God is the Creator—and this is a matter of faith—positive science is quite free to show, if it is able, how the world was made and when the world began. Similarly, if we feel convinced by the evidence, we are quite free to accept the theory that living things have evolved, provided we also grant that God stands behind the whole evolutionary process.

As regards man, we do not have to believe that God made man or woman *directly*; that is, so far as the human body is concerned. It is an article of faith that the human soul is directly created by God, but this is a fact quite outside the field of science. A theory of evolution, involving the human body, but which admits the special intervention of God in the production of the soul, is in no way contrary to biblical teaching. There is just one other proviso. The doctrine of the transmission of original sin seems to demand monogenism in the strict sense, this is to say, that the human race began with one original pair. For this reason, Pope Pius XII, in his encyclical *Humani Generis*, ruled out polygenism, the theory that mankind has sprung from a number of different stocks.

Within these broad limits, the doctrine of the evolution of living things, including physical man, in no way conflicts with the teaching of the Bible.

# NOTES AND REFERENCES

## CHAPTER I

<sup>1</sup> For a fuller treatment of the matter of this chapter see W. Harrington, *What Is the Bible?* New York: Paulist Press, 1963.

<sup>2</sup> Yahweh, sometimes wrongly written "Jehovah," is the special name for God in the Old Testament. Because of a later Jewish scruple it was not pronounced when the Scriptures were read aloud—the word *Adonai*—"Lord" being substituted for it. In most translations of the Old Testament *Yahweh* is rendered by "the Lord." but certain modern versions rightly reproduce the original Yahweh. The combination of "Yahweh God" occurring in these chapters is unusual.

<sup>3</sup> R. de Vaux, O.P., *La Genèse* (BJ), Paris 1953, p. 20.

<sup>4</sup> R. de Vaux, op. cit., p. 35.

## CHAPTER II

<sup>1</sup> An extraordinary longevity is attributed to the earliest Patriarchs because it was imagined that the duration of human life had diminished from one world epoch to the next; it will be no more than 600-200 years in the period between Noe and Abraham, and from 200 to 100 years from the time of the Hebrew patriarchs. This diminution is doubtless seen in relation to the progress of evil, because a long life is a blessing from God (Prov. 10, 27) and will also be one of the privileges of the messianic era (Isa. 65, 20). R. de Vaux, op. cit., pp. 53-54. In other words, these ages attributed to the patriarchs have a purely symbolic value. Ancient Babylonian traditions knew a list of ten kings, with fantastically long reigns, who lived before the deluge. The biblical writer uses a similar tradition for his own purposes.

<sup>2</sup> The translation of *Genesis* passages is from the Hebrew text—with an eye on the *Bible de Jérusalem* and the "Revised Standard Version." The New Testament passages are translated from the Greek.

<sup>3</sup> This truth is, of course, complex and includes a number of facts such as the special creation of man; still these can be fairly considered as the component parts of one inclusive fact.

<sup>4</sup> An anthropomorphism (or "manlikeness") is a manner of describing God or of speaking of Him in human terms. It is something we cannot avoid altogether if we are to speak of Him at all. Thus, though we know that He is a Spirit, we can speak of the "hand of God" and of God "hearing" our prayers. However, there is a question of more or less in the use of anthropomorphisms and the priestly narrative restricts them as far as possible. For instance, though God

is a Workman, He is very obviously not a human workman. The Yahwistic narrative, on the other hand, makes very free use of anthropomorphisms. This does not indicate a primitive notion of God but it is the expression of faith in a personal God, a God who really takes an interest in human affairs; a God, we might say, who is taken for granted. The faith of the priestly writer is no less real, of course, but he stresses the reverential approach to God.

<sup>5</sup> R. de Vaux, *op. cit.*, p. 41.

### CHAPTER III

<sup>1</sup> We have here a typical Hebrew word-play: She shall be called *ishsha* because she was taken from *ish*—the etymology is popular only; it is not exact. *Ish*—"man" is more generic than *adam*.

<sup>2</sup> The Priestly narrative does not have an account of the Fall (though it clearly takes for granted man's fallen state), so it regards the Deluge as a turning-point, the close of an era.

<sup>3</sup> See J. DeFraine, S.J., *The Bible and the Origin of Man*, New York 1962, pp. 62-64.

A. Wikenhauser, *Die Apostel-Geschichte*, Regensburg 1956, p. 204.

<sup>4</sup> A.-M. Dubarle, O.P., *Le Péché Originel dans l'Écriture*, Paris, 1958, pp. 167-168. I am very much indebted to Father Dubarle's study of original sin in St. Paul (pp. 121-172).

<sup>5</sup> See J. DeFraine, *op. cit.*, pp. 68-74. This author has established the point satisfactorily. In its most explicit statement, one regarding infant baptism, the Council has declared that, by baptism, "that which (infants) have acquired by generation is erased in them by regeneration." (Cf *Denzinger*, n. 791). But it is to be noted that in the preliminary discussion the following formula was rejected: "Original sin implies a taint and corruption of generation, which every man acquires from his parents and which are inherent in his flesh"; and this proposal was not considered: "If anyone denies that the taint of original sin is transmitted to the children by means of bodily generation, let him be anathema." Thus it is clear that the Council, in its solemn declaration, deliberately used the single word "generation" without further specification.

<sup>6</sup> C.T.S. translation, par. 37.

### CHAPTER IV

<sup>1</sup> This chapter is based, almost exclusively, on the unpublished notes of my former colleague, the late Father Ailbe Ryan, O.P.



<sup>2</sup> Paleontology is the science which, beginning with the earth's earliest life-forms, studies all its forms of life, including the human, up through the different geological eras. Naturally, it deals largely in fossils. Fossils are the remains of organisms, or the direct evidence of their former existence, preserved by natural causes in the earth's crust. The fossil remains found in sedimentary rocks are principally the hard parts, such as bones, or parts protected by shell—but occasionally also the soft tissues—of plant and animal life.

<sup>3</sup> The geological time scale is based in the stratification of the earth's crust. It is divided into five eras: Pre-Cambrian, Paleozoic, Mesozoic, Tertiary and Quaternary. The first four are subdivided into a number of Periods. The last Period of the Tertiary Era is called the Pliocene, covering from 15 to 1 million years ago. The first Period of the Quaternary Era began 1 million years ago and continued to c. 20,000 years ago, the beginning of the Recent Period.

<sup>4</sup> The Pithecanthropines include, principally, Pithecanthropus, Sinanthropus and Atlanthropus. Pithecanthropus, or Java man, was found sooner than Sinanthropus, or China (or Pekin) man. Atlanthropus was found in 1954 in Algeria.

<sup>5</sup> Neanderthal man gets his name from the Neander valley (German *thal*=valley) near Düsseldorf where his remains were first found. Today the skeletons of well over a hundred individuals have been found; they exhibit several forms of the one Neanderthal type.

<sup>6</sup> In 1868 five human skeletons were found in the rock-shelter of Cro-Magnon near the village of Les Eyzies in southern France. This was the discovery which brought definite recognition from the scientists for prehistoric "Cro-Magnon" man. Since then several skeletons, giving slight variations of the Cro-Magnon type have been found.

<sup>7</sup> By "artifacts" we mean products of past *human* activity. In the beginning these were stone implements of various kinds.

<sup>8</sup> We might explain a term which is often troublesome, that of *Homo Sapiens*. It is simply a category of zoological classification which comprises Modern man and Cro-Magnon man; in this context the word *sapiens* does not mean "wise," it does not even mean "rational." The term goes back to the great Swedish naturalist Linnaeus (1707-1778). He classified all living creatures and, in his list, marked the unique distinctiveness of the Genus Man by calling it *Homo Sapiens*. When, a century later, fossil man took his place in the world of science, he (Cro-Magnon man) was included with Modern man under the term *Homo Sapiens*. When, later still, Neanderthal man and Pithecanthropus turned up, scientists decided that these should be classified apart. Thus the term *Homo Sapiens* does not

imply that the earlier types are not rational, that is to say, that they are not men.

<sup>9</sup> The fossil remains of Fontéchevade man were found in 1947 in a cave at Fontéchevade near Angoulême in France. He is now being considered as a type with whom the "forerunners of Neanderthal man, and later Neanderthal man himself, may have inter-mixed." Here we should include Kanjera man, found in Kenya and dated shortly before 250,000 B.C. In physical type he is close to a modern Negro. Roughly contemporaneous with the last is the Swanscombe man from Surrey.

<sup>10</sup> The idea of distinction by species of prehistoric men was maintained because of the differences in their physical structure and because there was no adequate evidence for interbreeding among them. Today there is what is now considered as sound evidence for interbreeding among the middle-period and more recent fossil types and some indication of it even among the most ancient types of fossil men.

<sup>11</sup> The common stock of men would first be reached, going backward, at that point at which the different lines of their descent (as suggested by the fossil record) would first find a common stem in the ramification of evolution. Backward again from that point, to where the line of evolution changed, would be man's common stock.

At the beginning of the century some biologists held that man and apes were closely related, but the present-day view has radically changed. No one now holds that man is descended from any existing ape type. True, in a zoological and evolutionary sense, man belongs to the same stock as that of apes, not by direct descent, but probably by descent from a common ancestor which produced both man and apes. In other words, man and apes have, at an early stage branched off from a common stem and have since developed independently. See P. G. Fothergill, *Evolution and Christians*, London 1961, pp. 246-255.

<sup>12</sup> In connection with these theories we must say a word about two closely associated terms which pertain to them. "Polyphyletic" and "Monophyletic" origin describe all men, modern and prehistoric, in terms of their evolutionary origin from many or from one, original ancestral sources. The other terms, "Polygenism" and "Monogenism," focus rather on the ancestral sources, or source, and on the branches, or branch, of man's descent that lead from them.

<sup>13</sup> See above, p. 34.

<sup>14</sup> C.T.S. translation, par. 36.



